supplemental information or e-commerce opportunities relating to the scanned object. This information may be presented on an LCD display built-in to the scanner. In some embodiments, auxiliary CCD sensors are provided in addition to the scanner's usual image sensor. These auxiliary sensors can be employed for various purposes, including identifying surface texture characteristics so that corresponding filtering/processing of scan data can be performed; detecting affine transformations of the object being imaged so appropriate compensations can be applied, etc., etc.

In the Claims

Cancel claims 1, 2, 11 and 12.

Rewrite and add new claims to read as follows:

3. (Amended) In a scanner including a CPU, a memory, a linear sensor array, and first and second spaced-apart 2D sensor arrays serving as motion encoders, the CPU serving to process raw scan data collected by the linear sensor array from an imaged object into final scan data in accordance with scanner motion data provided from said 2D sensors, an improvement comprising software instructions in the memory causing the scanner to discern a machine-readable identifier from scan data acquired from the object, wherein said software instructions cause the CPU to process data from the 2D sensor arrays for a purpose in addition to sensing scanner motion.

4. The scanner of claim 3 in which said purpose includes beginning a watermark detection process before data from the linear sensor array is finally processed.

5. The scanner of claim 4 in which said purpose includes beginning to sense a watermark calibration signal.

6. The scanner of claim 3 in which said purpose includes identifying portions of the data collected by the linear sensor array that are relatively more likely to include detectable identifier data.

7. (Amended) The scanner of claim 3 in which said purpose is to quantify an object surface characteristic, wherein a filter can be applied to said scan data in accordance therewith.

8. The scanner of claim 3 in which said purpose is to assess relative distance to the object from different portions of the scanner.

9. (Amended) The scanner of claim 3 in which said purpose is to quantify an affine distortion in the scan data, so that compensation may be applied therefor.

10. (Amended) In a scanner including a CPU, a memory, a linear sensor array, and first and second spaced-apart 2D sensor arrays serving as motion encoders, the CPU serving to process raw scan data collected by the linear sensor array from an imaged object into final scan data in accordance with scanner motion data provided from said 2D sensors, an improvement comprising software instructions in the memory causing the scanner to discern a machine-readable identifier from scan data acquired from the object, wherein said identifier is steganographically encoded as a digital watermark.

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13. (New) In a scanner comprising a multi-element sensor array, a memory, a CPU, and a visual output device, the scanner producing scan data from signals provided from the sensor array, the memory including program instructions causing the CPU to control the visual output device, at least in part, in accordance with information decoded from the scan data, an improvement wherein the program instructions further cause the CPU to:

employ a first technique to examine said scan data for the possible presence of steganographic watermark data; and

if such possible presence is found, employ a second technique to attempt to decode plural-bits of steganographic watermark information from said scan data.

14. (New) The scanner of claim 13 in which the first technique comprises examining said scan data for the presence of a calibration signal

15. (New) The scanner of claim 13 in which the first technique comprises examining a frequency content of said scan data.

16. (New) In a scanner comprising a multi-element sensor array, a memory, a CPU, and a visual output device, the scanner producing scan data from signals provided from the sensor array, the memory including program instructions causing the CPU to control the visual output device, at least in part, in accordance with information decoded from the scan data, an improvement wherein the program instructions further cause the CPU to:

employ a first technique to examine said scan data for attribute information useful in guiding possible subsequent decoding of the scan data to discern plural-bit steganographic watermark information therefrom; and

employ a second technique to attempt to decode plural-bits of steganographic watermark information from said scan data, said second technique being determined at least in part by said attribute information.

17. (New) The scanner of claim 16 wherein the first technique comprises examining a frequency content of said scan data.

18. (New) The scanner of claim 16 wherein the first technique comprises examining said scan data to determine texture information.

19. (New) In a scanner comprising a multi-element sensor array, a memory, a CPU, and a visual output device, the scanner producing scan data from signals provided from the sensor array, the memory including program instructions causing the CPU to

control the visual output device, at least in part, in accordance with information decoded from the scan data, an improvement wherein the program instructions further cause the CPU to:

employ a first technique to identify one or more portions of said scan data that appear most promising for decoding steganographic watermark data therefrom; and

employ a second technique to attempt to decode plural-bits of steganographic watermark information from the scan data, said second technique particularly considering a portion identified by the first technique.

20. (New) The scanner of claim 19 wherein the first technique comprises identifying a portion of said scan data that is sampled at a higher sampling rate than other portions.

21. (New) In a scanner comprising a multi-element sensor array, a memory, a CPU, and a visual output device, the scanner producing scan data from signals provided from the sensor array, the memory including program instructions causing the CPU to control the visual output device, at least in part, in accordance with information decoded from the scan data, an improvement wherein:

the scanner comprises two spaced-apart multi-element sensor arrays; and

said program instructions cause said CPU to exploit the different views of an object being scanned to improve the decoding of information from said scan data.

22. (New) The scanner of claim 21 wherein said program instructions cause the CPU to determine an optically-sensed attribute corresponding to each of the spaced-apart multi-element sensor arrays, and to use said attribute in determining a compensation to be applied to said scan data prior to decoding of the information therefrom.

23. (New) The scanner of claim 21 wherein said program instructions cause the CPU to attempt to decode plural-bit steganographic watermark information from said scan data, exploiting said different views.